

AMENDMENTS

In the Claims

1. – 12. (Canceled)

13. (Currently Amended) An apparatus for detecting a molecule that modulates activity of a membrane-spanning, signal-transducing protein, the apparatus comprising:

a membrane-spanning, signal-transducing protein (MSST) ~~of any one of claims 1-12 comprising~~ a conformationally-sensitive detectable probe positioned on or within a conformationally sensitive region of the MSST protein, with the proviso that no probe is positioned in a transmembrane domain, wherein interaction of the MSST protein with an agonist or antagonist causes a conformational change in the conformationally sensitive region and a change in a detectable signal of the conformationally sensitive detectable probe; and

a immobilization phase to which the MSST protein is attached.

14. – 15. (Canceled)

16. (New) The apparatus of claim 13, wherein the conformationally-sensitive detectable probe is a detectable chemical label attached to an amino acid residue of the conformationally sensitive region.

17. (New) The apparatus of claim 16, wherein the detectable chemical label is a fluorescent probe.

18. (New) The apparatus of claim 13, wherein the conformationally sensitive region is in an intracellular loop, an extracellular loop, an N-terminal domain, or a C-terminal domain of the MSST protein.

19. (New) The apparatus of claim 13, wherein the MSST protein is selected from the group consisting of a G protein coupled receptor (GPCR), an ion channel, or a transporter protein.

20. (New) The apparatus of claim 13, wherein the MSST protein is a G-protein coupled receptor (GPCR), and the conformationally sensitive region is an intracellular loop, an extracellular loop, an N-terminal domain, or a C-terminal domain of the GPCR.

21. (New) The apparatus of claim 20, wherein the conformationally sensitive region is a third intracellular loop of the GPCR, and the conformationally sensitive detectable probe is a detectable chemical label attached to one or more amino acid residues within the third intracellular loop so that a conformational change in the GPCR due to interaction with an agonist or antagonist causes a change in the detectable signal of the detectable probe.

22. (New) The apparatus of claim 21, wherein the detectable chemical label is attached to an amino acid residue corresponding to amino acid residue at position 265 in a β 2-adrenergic receptor.